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10/797,913	03/10/2004	Brad A. Medford	1033-LB1044	3342

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EXAMINER

NGUYEN, ANH NGOC M

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2416

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07/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/797,913	Applicant(s) MEDFORD, BRAD A.	
	Examiner Anh Ngoc Nguyen	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 and 19-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1 - 8 and 15 - 17, in the reply filed on 03/20/2009 is acknowledged.
2. Claims 12 - 14 and 19 - 24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected groups. Election was made with traverse in the reply filed on 03/20/2009.

Response to Amendment

3. Applicant's Arguments/Remarks filed 11/18/2008 with respect to claims 1 - 8, 12 - 17, and 19 - 24 have been considered but are moot in view of the new ground(s) of rejection.

Claim 1 has been amended. Claims 1 - 8, 12 - 17 and 19 - 24 are pending.

DETAILED ACTION

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1 - 8 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of

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‘Processes’ under 35 U.S.C. 101”). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 5, 7, 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levi et al. (US 7,376,144) in view of Davis et al. (5,459,600).

Levi discloses protocol for native service transport over point to multipoint passive optical network comprising the following features:

Regarding claim 1, Levi discloses a method comprising: communicating an a combined Internet Protocol (IP) signal and an Asynchronous Transfer Mode (ATM) signal via an optical medium (see abstract, col. 1 lines 45 – 67, col. 2 lines 1 – 11, col. 3 lines 1 – 10 lines 50 - 60, Fig. 1, Fig. 2, IP 14 and ATM 16 within frame 1 are sent in a optical path).

Regarding claim 7, Levi discloses further comprising: communicating the ATM signal and the IP signal to a first location and a second location (see Fig. 1, Fig. 2, col. 1 lines 65 – 67 and col. 2 lines 1 – 12, a point to multipoint network...to multiple NT's).

Regarding claim 8, Levi discloses wherein the ATM signal and the IP signal are communicated via a passive optical network (see Fig. 1, Fig. 2, col. 1 lines 65 – 67 and col. 2

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lines 1 – 12, IP 14 and ATM 16 within frame 1 are sent in a optical path; see abstract, over a passive optical network).

Levi discloses the claimed limitation as stated above. However, Levi does not disclose the feature of phase modulation of two signals (ATM and IP).

Davis discloses using phase modulators to modulate signals (payload) wherein the signals may be of the same or different protocols (i.e. ATM, IP...etc...) (see abstract, col. 9 lines 7 - 15).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the invention of Levi, and use a phase modulator to modulate signals of the same or different protocol, as taught by Davis, in order to provide an optical telecommunication system with a reduced number of optical components for multiplexing various payloads on the same optical transmission path, as discussed by Davis (see col. 3 lines 9 - 14).

Regarding claim 1, the combination of Levi and Davis disclose wherein the ATM signal is phase modulated based on the IP signal (see Levi: Fig. 1, Fig. 2, shown are frames with IP 14 and ATM 16; see Davis: abstract, col. 9 lines 6 – 15, Fig. 2, Fig. 3, 26F and 26S are phase modulators for modulating signals).

Regarding claim 5, the combination of Levi and Davis disclose further comprising forming a combined ATM/IP signal by modulating a phase of the ATM signal based on the IP signal (see Levi: Fig. 1, Fig. 2, shown are frames with both IP 14 and ATM 16 together; see Davis: abstract, col. 9 lines 6 – 15, Fig. 2, Fig. 3, 26F and 26S are phase modulators for modulating signals).

Regarding claim 15, Levi discloses an apparatus to communicate an Asynchronous Transfer Mode (ATM) signal and an Internet Protocol (IP) signal (see abstract, Fig. 1, Fig. 2,

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col. 1 lines 45 – 67, col. 2 lines 1 - 11, frame 1 with IP 14 and ATM 16 are sent downstream and upstream), the apparatus comprising: an optical line terminal (OLT) (see col. 1 lines 49 – 54, col. 5 lines 4 – 25 lines 55 - 60, LT – line termination).

Levi discloses the features of claim 15 as stated above and further shows an ATM and an IP signal with the same frame (Fig. 1, Fig. 2). Levi does not disclose a phase modulator.

Davis discloses using phase modulators to modulate signals (payload) wherein the signals may be of the same or different protocols (i.e. ATM, IP..etc..) (see abstract, col. 9 lines 7 - 15).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the invention of Levi, and use a phase modulator to modulate signals of the same or different protocol, as taught by Davis, in order to provide an optical telecommunication system with a reduced number of optical components for multiplexing various payloads on the same optical transmission path, as discussed by Davis (see col. 3 lines 9 - 14).

Regarding claim 15, the combination of Levi and Davis disclose the OLT (see Levi: abstract, col. 1 lines 49 – 54, LT-line termination in a passive optical network) comprising a phase modulator configured to phase modulate the ATM signal based on the IP signal to produce a Combined ATM/IP signal (see Levi: Fig. 1, Fig. 2, shown are frames with both IP 14 and ATM 16 together; see Davis: abstract, col. 9 lines 6 – 15, Fig. 2, Fig. 3, 26F and 26S are phase modulators for modulating signals), the OLT further to output the combined ATM/IP signal (see Levi: Fig. 1, Fig. 2, where shown are frames with IP 14 and ATM 16 sent together downstream and upstream).

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8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levi et al. (US 7,376,144) in view of Davis et al. (5,459,600) and further in view of Meigen et al. (US 2002/0021659).

Levi and Davis disclose the claimed limitations as stated in paragraph above. Levi and Davis do not disclose the following features: regarding claim 6, wherein the ATM-based network comprises a G.983-based network.

Meigen discloses point to point protection in point to multipoint networks comprising the following features:

Regarding claim 6, Meigen discloses wherein the ATM-based network comprises a G.983-based network (see Fig. 1 and para. 0014, a data network according to the invention and in compliance with G. 983).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the invention of Levi and Davis, and have the features, as taught by Meijen, in order to uphold connections to unprotected second network end nodes and removes the necessity of a quick repair of the network connection, as discussed by Meijen (see para. 0011).

9. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levi et al. (US 7,376,144) in view of Davis et al. (5,459,600) and further in view of Leuthold et al. (US 2003/0210912).

Levi and Davis disclose the ATM signal is phase modulated based on the IP signal as stated in paragraph 7 above.

Regarding claim 2, Leuthold discloses wherein the ATM signal is phase modulated based on the IP signal without exceeding a specified tolerance of symbol period of the ATM signal (see

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para. 0067, a peak to peak amplitude of the phase modulation of about $\pi/2$ with a tolerance of $\pm 20\%$...).

Regarding claim 16, Leuthold discloses wherein the phase modulator is further configured to phase modulate the ATM signal based on the IP signal without exceeding a specified tolerance of symbol period of the ATM signal (see para. 0067, a peak to peak amplitude of the phase modulation of about $\pi/2$ with a tolerance of $\pm 20\%$...).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the invention of Levi and Davis, and have the features, as taught by Leuthold, in order to provide for a low cost method and apparatus for generating RZ and CSRZ pulses, as discussed by Leuthold (see para. 0007).

10. Claims 3, 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levi et al. (US 7,376,144) in view of Davis et al. (5,459,600) and further in view of Beidas et al (6,608,874).

Levi and Davis disclose the claimed limitations as stated in paragraph 7 above. Levi and Davis do not disclose the following features: regarding claim 3, wherein the phase modulating encodes multiple bits of the IP signal per pulse in the ATM signal; regarding claim 4, wherein the phase modulating encodes two bits of the IP signal per pulse in the ATM signal; regarding claim 17, wherein the phase modulator is further configured to encode multiple bits of the IP signal per pulse in the ATM signal.

Beidas discloses method and apparatus for quadrature multi pulse modulation of data for spectrally efficient communication comprising the following features:

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Regarding claim 3, Beidas discloses wherein the phase modulating encodes multiple bits of the IP signal per pulse in the ATM signal (see col. 1 lines 34 – 67, communicating two bits of information on each quadrature component of a carrier signal during a single signaling interval).

Regarding claim 4, Beidas discloses wherein the phase modulating encodes two bits of the IP signal per pulse in the ATM signal (see col. 1 lines 34 – 67, communicating two bits of information on each quadrature component of a carrier signal during a single signaling interval).

Regarding claim 17, Beidas discloses wherein the phase modulator is further configured to encode multiple bits of the IP signal per pulse in the ATM signal (see col. 1 lines 34 – 67, communicating two bits of information on each quadrature component of a carrier signal during a single signaling interval).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the invention of Levi and Davis, and have the features, as taught by Beidas, in order to minimize as possible as possible the power required for data transmission for cost and energy conservation, as discussed by Beidas (see col. 2 lines 26 - 30).

Conclusion

Examiner's Note: Examiner has cited particular paragraphs, columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the

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claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and, also to verify and ascertain the metes and bounds of the Claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ngoc Nguyen whose telephone number is (571) 270-5139. The examiner can normally be reached on M - F, from 7AM to 3PM (alternate first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 5712723182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anh Ngoc Nguyen/
Examiner, Art Unit 2416
07/15/2009

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2416